

Recycling of Single Use Metal Instruments Western Health, Victoria, Australia

GGHH Agenda Goals

- Waste
- Chemicals

Hospital Goals

- Waste minimization
- Cost savings

Progress Achieved

- Financial benefits: Single use metal instruments used to go into Clinical Waste – Sharps bins, which cost ~\$4.50AUD/litre (~\$3.30USD/litre) on average to dispose of.
- Environmental benefit: Single use metal instruments were previously treated as Clinical Waste – Sharps, and processed via hammer mill and chemical decontamination then sent to landfill. This is the norm in the State of Victoria. Making steel from recycled single use instruments uses 75% less energy than when producing steel from raw materials. Steel is an inherently 100% recyclable material and in terms of tonnage is the most recycled material in the world.
- Human health benefit: Reduced chemicals associated with Clinical Waste Sharps treatment
- Other quantitative results: Reduced transportation; recycling goes to local metals scrap yard (exposure reduction, more satisfaction, direct and indirect benefits, etc.)



The Issue

Clinicians at Western Health are particularly vocal about the wastefulness of disposing “perfectly good scissors and instruments” to Sharps Waste after just one use. Often they will be used to merely cut a clean dressing. Other times they will be used for surgical endeavours, however, they generally seem quite fit for reuse, but we are required to throw them away. Whilst there are many instances of products in healthcare where this is the case, these items are cited most often when speaking about the unsustainable behaviours prevalent in healthcare.

Figure 1 Scissors previously sent to landfill

Western Health recognised this need to reassure staff and act more responsibly with regards to the environmental impact of this behaviour.

Unfortunately, the items were not able to be replaced with reusable items due to issues of the extreme cost of implementation and limited Central Sterilising Supply Department (CSSD) resources to process them. However, it was proven possible to implement a system whereby staff could be assured that they were recycled and returned to the steel industry for remanufacture (not necessarily back into scissors). Patients would be unaffected by this change.

Sustainability Strategy Implemented

The pressure to create this program came from the clinicians. The issue came up often in staff consultations and sustainability education sessions as one that was important to them. First we determined usage of the items we planned to collect and provided a

Briefing Paper to the Sustainability Committee with a recommendation to support a trial on a surgical ward. This was supported, which enabled us to get usage data, weights and measures for the likely financial return on recycling.

The program was proposed as a business case, with a small return on investment coming from the recycle of the metal, and given financial endorsement by Claire Culley, Divisional Director of Surgery. It is important to state that the business case had a long horizon (>10 years), so the endorsement was more about staff's insistence and Western Health's corporate social responsibility in this space.

The scissors could be disposed of by clinicians in a basket in the Dirty Utility Room of a Ward or Department. When the basket is full, it can be cleaned in a local pan sanitiser or instrument washer by the Patient Services Assistant (PSA) on the Ward. Once clean, the instruments are taken to a central location by the same staff who take the Sharps bins, and emptied into a 240L wheelie bin on the Loading Dock. From here instruments are taken to a metals scrap yard or picked up by a metals recycler. This strategy was posed to Nurse Unit Managers, Infection Prevention and OH&S for consultation. There was little challenge to the process as such.

At this stage, we do not give the instruments to a third work program, because we find that they tend to rust once they are washed if they are left on site too long.

Implementation process

We employed a pilot program on a surgical ward to determine likely volumes of returned instruments and to test the basket before full deployment. This was successful in the eyes of Nurse Unit Managers and clinicians, so the cultural changes were easily attained. The program is very easy to rollout, taking one day at each site.

Rollout was preceded by a news item via various communication channels and ensured awareness of the Nurse Unit Manager in each area, of the programs imminent arrival and need for support. An information poster sits on the wall above the wire basket (on a shelf) to indicate what is collected - "Single use metal instruments only; dipped. No reusable instruments. No blades or scalpels". There has been excellent compliance with these simple directions.

Tracking Progress

Success is measured in terms of the following:

1. Program compliance by clinicians;
2. Volume of single use metal instruments recycled in relation to those purchased;
3. Workplace injuries as a direct result of this recycling program; and
4. Clinician satisfaction.

Challenges and lessons learned

The most difficult part was finding a basket that would fit all sized instruments and also fit in our pan sanitizer to enable the instruments to be washed effectively. It was vital to avoid risk of injury to those handling the basket during cleaning or emptying. This meant that the sides of the basket needed to be a very fine mesh so that instruments would not protrude through the holes, but the lid needed to



Figure 2 Scissor collection and sterilisation basket

be relatively open holes to enable irrigation and sanitization of the instruments. There were several prototypes presented to the Sustainability Committee (which includes a representative body of decision makers from across healthcare and OH&S) and Infection Prevention before a final prototype was endorsed.

Next Steps

1. Next steps will be to perform an analysis of areas where the volume of single use metal instruments recycled in a particular area is poor in relation to those purchased. This may suggest a lack of awareness of the program by staff, or some problem with the positioning of the basket in relation to their workflow.
2. Provide consultation and education with staff in the areas identified in step 1.

Demographic information

Western Health (WH) manages three acute public hospitals: Footscray Hospital, Sunshine Hospital and the Williamstown Hospital. It also operates the Sunbury Day Hospital and a Transition Care Program at Hazeldean in Williamstown.

A wide range of community based services are also managed by Western Health, along with a large Health and Addiction Medicine Service. Services are provided to the western region of Melbourne which has a population of approximately 800,000 people.

Western Health provides a comprehensive, integrated range of services from its various sites; ranging from acute tertiary services in areas of emergency medicine, intensive care, medical and surgical services, through to subacute care and specialist ambulatory clinics. Western Health provides a combination of hospital and community-based services to aged, adult and paediatric patients and newborn babies.

Quotes:

"I can't believe that we have to throw out perfectly good scissors after just one use. It's so wasteful!" Clinician

"It was important that the collection and washing system negate the double handling of instruments." Infection Prevention Manager: Richard Bartolo

"It was important that the wire basket was suitable in a number of ways: that it does not allow sharps to penetrate the washing holes; that it be safe to carry and not too heavy." Director of OH&S: Steven Parker

Keywords / topics: Recycling; Single use metal instruments

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